



Title	A NOTE ON INFINITIVE COMPLEMENTATION IN ENGLISH
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Citation	Osaka Literary Review. 1990, 29, p. 10-20
Version Type	VoR
URL	<a href="https://doi.org/10.18910/25455">https://doi.org/10.18910/25455</a>
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# A NOTE ON INFINITIVAL COMPLEMENTATION IN ENGLISH \*

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## 1. Introduction: the Category of Infinitival Complements

Since Chomsky (1981), it has generally been considered that the category of infinitival complements of predicates in English is CP but not IP, as illustrated in (1). This is because if the category of an infinitival complement is IP, PRO in the subject position of the complement is governed by the matrix predicate, resulting in the conflict with the PRO Theorem.

(1) a. John wanted [CP [IP PRO to kiss Mary ]]  
b. John was eager [CP [IP PRO to kiss Mary ]]

There is another type of infinitival complementation in English. Predicates of this type take IP as the category of their infinitival complements. It is generally considered that only *raising predicates* such as *seem* or *likely*, and *ECM verbs* such as *believe* or *consider* are classified in this type.

(2) a. John seems [IP t to be rich ]  
b. John believed [IP Mary to be intelligent ]

Contrary to this general assumption, Koster (1984, 1986) and Ura (1990), abandoning the PRO Theorem, claim that so-called *Obligatory Control Predicates* such as *try*, *persuade*, or *afraid*, unlike *want* or *eager*, take IP as their infinitival complements. Ura (1990) exhibits the following examples<sup>12)</sup> :

(3) a. John wanted [CP [IP PRO to meet at 6 ]]  
b. John was eager [CP [IP PRO to meet at 6 .]]  
c. John wanted [CP [IP PRO to be massacred t in the city ]]

(4) a. \*John tried [<sub>IP</sub> PRO to meet at 6 ]  
 b. \*John persuaded Mary [<sub>IP</sub> PRO to meet at 6 ]  
 c. \*John was afraid [<sub>IP</sub> PRO to be massacred t in the city ]  
 d. \*John tried [<sub>IP</sub> PRO to be massacred t in the city ]

Note that the ill-formedness of (4) should not be attributed to the conflict with the PRO Theorem, which requires that PRO is not governed. For, although every PRO in (5) is governed by the matrix predicate, the sentence is, of course, perfectly grammatical.<sup>3)</sup>

(5) a. John tried [<sub>IP</sub> PRO to kiss Mary ]  
 b. John persuaded Mary [<sub>IP</sub> PRO to kiss him ]  
 c. Mary was afraid [<sub>IP</sub> PRO to be kissed t by John ]

Some papers such as Bouchard (1984) or Hornstein & Lightfoot (1987) suggest that we may dispense with the PRO Theorem. Furthermore, they claim that a governed PRO behaves like an anaphor. If we adopt their analysis, the contrast between (3) and (4) can be explained. Every PRO in (3) and (4) is interpreted as plural because of the semantic property of the embedded verb which assigns a  $\theta$ -role to it. Each PRO in (4) is governed by the matrix predicate and, as a result, it behaves like an anaphor. Its governing category is the matrix IP. *John* (or *Mary*), however, cannot bind PRO, because they differ in number. Thus PRO in (4) fails to be bound, resulting in the violation of the Binding Theory A.

On the other hand, each PRO in (3) is not governed by any lexical element. Thus it is allowed to be not bound by the matrix subject. It follows that the sentences in (3) are well-formed.<sup>4)</sup> Note that unless we assume that the category of infinitival complements (henceforth, ICs) of *try*-type predicates is IP and adopt the analysis of Bouchard (1984) and Hornstein & Lightfoot (1987), we can hardly explain this fact.<sup>5)</sup>

In what follows, we will observe that some syntactic differences between the constructions of *want*-type and *try*-type predicates are explained by taking advantage of the difference of categories between their ICs. Before doing so, in the next section we consider the problems the theory seems to involve.

## 2. Seemingly Insoluble Problems of the Theory

Amano (1989) argues against the proposal presented above, pointing out that *Bill* in (6a) could get Case from *try* and the wh-trace in (6b) could fulfill the ECP if *try* could govern the IP-Spec position of its IC.

- (6) a. \*John tried [<sub>IP</sub> Bill to kiss Mary ]
- b. \*Who did John try [<sub>IP</sub> t to kiss Mary ]

As for (6a), there is, however, an example which shows that *try* which takes an IC as in (5a) differs in Case-marking property from *try* which can assign Case to the following NP as in (7) :

- (7) John tried [ his best/ his luck ].
- (8) a. \*John tried [ PRO to kiss Mary ] and [ his best/his luck ]
- b. \*John tried [ his best/his luck ] and [ PRO to kiss Mary ]
- (9) a. John tried [ PRO to kiss Mary ] and [ PRO to do his best ]
- b. John tried [ his best ] and [ his luck ]

As (8) shows, the fact that the respective complements of two types of *try* cannot be coordinated indicates that two types of *try* differ at least in Case-marking property. Then, *Bill* cannot get Case because *try* in (6a), which takes an IC, cannot assign Case. Hence, (6a) does not get in the way of our theory at all.

As for (6b), given the explanation for (6a), it is explained straightforwardly. In much literature, it is generally assumed that

wh-trace must be Case-marked. If this is true, being assigned no Case as discussed above, the trace in (6b) violates this postulation, whence its ill-formedness.<sup>6)</sup>

Other problems one might consider to be connected with the theory presented are as follows :

- (10) a. \*John seems [<sub>IP</sub> PRO to know everything ]
- b. \*It seems [<sub>IP</sub> PRO to be here ]
- c. \*John believes [<sub>IP</sub> PRO to be a hero ]  
            (cf. \*John<sub>i</sub> believes [<sub>IP</sub> t<sub>i</sub> to be a hero ] )
- d. \*It is believed [<sub>IP</sub> PRO to be here ]

PRO never occurs in the embedded subject position of raising predicates and ECM verbs. These are ruled out by the "conspiracy" of independent UG modules including the Control Theory proposed in Ura (1990). (See footnote 3.) In (10a), because PRO intercepts the Agent  $\theta$ -role of *know*, *John* has no  $\theta$ -role, violating the  $\theta$ -Criterion. In (10b,d), PRO is governed and, as a result, it must be bound in the matrix clause, as discussed above. Then, it is bound by non- $\theta$ -argument *it*. Independently, *it*, being an expletive, must be linked with the following IP to make a CHAIN (Chomsky, 1986). Thus, PRO, *it*, and the IP-clause containing the PRO are coindexed. But, this coindexing readily violates the so-called *i-within-i* condition. PRO in (10c) violates the PRO Hypothesis, which requires that PRO must not be  $\theta$ -governed and/or Case-marked (see footnote 3), because *believe* Case-marks PRO in (10c).

As has been observed above, although the proposal that *try*-type predicates take IP as their ICs seemingly raises problems, it turns out to be not only tenable but valid if we take UG modules into consideration. In what follows, we will be concerned with syntactic differences between *want*-type and *try*-type predicates, and observe that they are accounted for by UG modules, primarily by the Control Theory.

### 3. Some Differences between Two Types of ICs

To begin with, let us consider the following examples, which are self-evident but crucial<sup>7)</sup> :

- (11) a. John wanted very much for Mary to kiss him.  
 b. John preferred for Mary to go there.  
 c. John was eager for Mary to kiss him.  
 d. John was willing for Mary to kiss him.  
 e. It is important for John to go there.
  
- (12) a. \*John tried for Mary to kiss him.  
 b. \*John attempted for Bill to marry Mary.  
 c. \*John persuaded Mary for her son to go there.  
 d. \*John forced Mary for her daughter to marry him.  
 e. \*Mary was afraid for her son to go there.

Whereas the predicates in (11) may take the overt complementizer *for* in the complements, the predicates in (12) may not.<sup>8)</sup>

The point here is that if the category of ICs of *try*-type predicates as well as that of ICs of *want*-type predicates is CP, we need some special devices to explain why *for* cannot occur in the Comp position of ICs of *try*-type predicates.<sup>9)</sup> On the contrary, assuming that the category of ICs of *try*-type predicates is IP and that of ICs of *want*-type predicates is CP, we straightforwardly explain the contrast between (11) and (12) without any special device. Given that, there is no room for the complementizer *for* in the complements in (12) because the category of the complements is IP.

Next let us consider some examples which somewhat relate to semantics as well as to syntax :

- (13) a. John wanted [ to meet Mary tomorrow ]  
 b. John was eager [ to go to the hospital tomorrow ]

(14) a. \*John tried [ to meet Mary tomorrow ]  
 (cf. John tried [ to meet Mary yesterday ] )  
 b. \*John persuaded Mary [ to go to the hospital tomorrow ]  
 (cf. John persuaded Mary [ to go to the hospital last night ] )

Umebara (1989) proposes an interpretational rule of an infinitival INFL as follows: if an infinitival INFL is governed by a lexical element, its reference of time is dependent on another c-commanding INFL; otherwise, its reference of time is free. In (13) time reference of each infinitival INFL *to* is independent of the matrix INFL. On the other hand, each infinitival INFL in (14) must be dependent on the matrix INFL in regard to time reference. If we adopt Umebara's analysis of infinitival INFL, it follows that each infinitival INFL in (14) is governed by a lexical element and the one in (13) is not. Given this fact, we may, against the PRO Theorem, conclude that in (14) the embedded infinitival INFLs are governed by the matrix verbs *tried* and *persuade*, respectively. And, as a result, we may also conclude that *try*-type predicates take IP as their complement category.

The examples that follow are sufficient to exemplify the categorial difference between ICs of *want*-type predicates and those of *try*-type predicates. First, whereas ICs of *want*-type predicates can occur in the focus position in Pseudocleft constructions, those of *try*-type predicates cannot :

(15) a. What John wanted was [ PRO to kiss Mary ]  
 b. What John was eager was [ PRO to kiss Mary ]  
 c. What is important is [ PRO to go there ]

(16) a. \*What John tried was [ PRO to kiss Mary ]  
 b. \*What John persuaded Mary was [ PRO to kiss him ]  
 c. \*What Mary was afraid was [ PRO to kiss John ]

Second, ICs of *want*-type predicates can be preposed to the

subject position of the sentence by the passivization; on the other hand, those of *try*-type predicates cannot :

(17) a. Since the invention of airplane, PRO to fly high in the sky had been wanted by everyone.  
 b. PRO to stay here is preferred by Bill.

(Rosenbaum 1967 : 93)

(18) a. \*PRO to kiss Mary was tried by John.  
 b. \*PRO to climb the Matterhorn had been attempted by many rock-climbers.

The contrast between (15) and (16) and between (17) and (18) are readily accounted for by the Control Theory. PRO in (15) and (17) is the one which occurs in ICs of *want*-type predicates. It follows, as discussed above, that such PRO may not be bound by its controller. On the other hand, PRO in (16) and (18) must be bound by its controller because it occurs in ICs of *try*-type predicates. PRO in (16) and (18) obviously fails to be bound by its controller in its Governing Category, whence the ill-formedness of the sentences.

Third, Nakajima (1982) claims that result clause *so that* is adjoined to CP (what he calls V<sup>4</sup>). According to his analysis, *so that* clause can modify either the whole matrix clause or only the embedded clause when the category of the embedded clause is CP. This is because *so that* clause can be adjoined either to the CP of the matrix clause or to the CP of the embedded clause. The ambiguous reading resulting from the two ways of attachment of *so that* is obtained only in (19). Each *so that* clause in (20) can modify only the matrix clause as a whole.

(19) a. John hoped to kill himself so that people would be surprised.  
 b. John was eager to kill himself so that people would be surprised.

(20) a. John tried to kill himself so that people would be surprised.  
 b. Mary persuaded John to kill himself so that people would be surprised.

For example, one reading in (19a) is that John hoped that his suicide surprised people: the other is that John's hope that he would kill himself surprised people.<sup>10)</sup> On the other hand, in (20a) we can obtain only the interpretation that the fact that John tried to kill himself surprised people. These facts indicate that the category of ICs of *try*-type predicates is not CP.

#### 4. Concluding Remarks

Thus far we have observed that there are some differences in syntactic behavior between ICs of *try*-type predicates and those of *want*-type predicates, and that these difference are accounted for if we assume that *try*-type predicates, unlike *want*-type ones, take IP as their ICs. This analysis readily leads us to the conflict with the PRO Theorem, which is broadly accepted. Many puzzles, however, still remain in control phenomena. It is possible that we attribute the stagnation of the study of control phenomena to the defectiveness of the PRO Theorem. It is worth while reconsidering control phenomena and reexamining the PRO Theorem along the line of analysis presented here.<sup>11)</sup>

#### Notes

- \* I would like to thank Koji Fujita, Mari Takahashi, and Taro Kageyama for useful comments on an earlier version of this paper. I am much indebted to Taisuke Nishigauchi for his invaluable comments and helpful discussions on this work.
- 1) The traces in (3c) and (4c,d) are made by the movement of PRO to the embedded IP-Spec position. This movement is not induced by the government of PRO by *massacred*. It is induced by the requirement of the agreement between PRO and INFL *to*. In fact, PRO in (3c) and (4c,d) is assigned Theme  $\theta$ -role by *massacred*. For the discussion on the agreement

between PRO and INFL, see Borer (1989) and Ura (1990).

- 2 ) The clear way to distinguish *want*-type predicates from *try*-type ones will be exhibited in section 3 .
- 3 ) Without the PRO Theorem, no restriction seems to rule out such sentences as in ( i ).

( i ) a. \* PRO hit Mary.  
b. \* John hit PRO.

Ura (1990) proposes a Control Theory based on the PRO Hypothesis, which rules them out. The definition of the PRO Hypothesis is as follows: PRO must not be  $\theta$ -governed and/or Case-marked (at S-structure). For the validity and problems of this postulation, see Ura (1990).

- 4 ) One should notice that under the theory presented in Ura (1990) PRO in the IP-Spec position of *want*-type predicates may or may not be bound by any NP outside its Governing Category. Hence, the theory certainly allows PRO in ( i ) to be bound by *John*, which is outside its Governing Category.

( i ) a. John<sub>i</sub> wanted [ <sub>CP</sub> [ <sub>IP</sub> PRO<sub>i</sub> to kiss Mary ] ]  
b. John<sub>i</sub> was eager [ <sub>CP</sub> [ <sub>IP</sub> PRO<sub>i</sub> to kiss Mary ] ]  
c. John<sub>i</sub> wanted [ <sub>CP</sub> [ <sub>IP</sub> PRO<sub>i</sub> to be kissed t by Mary ] ]

However, the theory incorrectly allows PRO in ( i ) to be not bound by *John*, just like in (3). It seems that PRO in the IP-Spec position of *want*-type predicates tends to be controlled by a topic NP in the sentence or within the context. In unmarked cases, it is controlled by the matrix subject, which is a salient topic NP in most sentences. When a salient NP which agrees with it in number and c-commands it from outside its Governing Category is provided within the sentence, it is controlled by the NP, as in (i). Otherwise, it cannot be controlled within the sentence and, as a result, a salient NP which agrees with it in number is sought in the context as its controller, as in (3).

In fact, in (3) the controller of PRO is a group of persons including *John*. But we cannot get this interpretation without supplying a number of background information to the sentence. (See Levinson (1987, section 4) for some related arguments.) Apart from pragmatic factors, observing locality on this control relation, Ura (in preparation) claims that an unselective operator such as *Topic Oriented Operator* is concerned with this type of control.

- 5 ) For example, the control theory which is proposed in Manzini (1983) and

Brody & Manzini (1988) cannot explain this fact. The theory incorrectly predicts that each PRO in (3) must be bound by the matrix subject.

6) Observing such a following sentence, Epstein (1987) claims that wh-trace need not be Case-marked :

(i) Who does John believe sincerely t to be a hero?

(cf. \* John believes sincerely Bill to be a hero.)

Notice that whereas *believe* is intrinsically able to assign Case to the following NP (although in (i) it fails to do so because it is not adjacent to the NP), *try* which takes an IC does not have the ability as observed in (8). I assume that wh-trace, indeed, need not be Case-marked but it must be governed by an element which has the ability to assign Case. Given this, it follows that not only (6b) but also (ii) below is ill-formed :

(ii) \* John is really alive, as Mary heard the rumor t.

(cf. Mary heard the rumor that John is alive.)

(iii) John is really dead, as it is rumored t.

(cf. It is rumored that John is really dead.)

According to Stowell (1987), *as* requires the movement of the operator which corresponds to CP with respect to the category. Then, (ii) would be grammatical like (iii). The N *rumor*, however, does not have the ability to assign Case unlike the V *rumor*. Thus, the trace in (ii) is not governed by any element which has the ability to assign Case, resulting in the ill-formedness of (ii).

7) Following Chomsky (1981), I assume here that *for* in the IC of *want*-type predicates is deleted at PF. Hence, at S-structure *for* does exist even in the following sentence.

(i) John wants Mary to kiss him.

8) Needless to say, whereas predicates which allow *for* to occur in their ICs as in (11), i.e., *want*-type predicates, also allow pragmatical control such as in (3), predicates which do not allow it as in (12), i.e., *try*-type predicates, require obligatory control such as in (4).

9) We might allow that in addition to other information, each lexical entry of *try*-type predicates includes special information about c-selection which requires that the overt complementizer must not occur. Such a device is, however, obviously *ad hoc* and has no explanatory power.

10) As a matter of fact, the former reading is rather marginal. But it is important here that in (19) the former reading is possible, but in (20) it is completely impossible.

11) For more extensive discussions, see Ura (1990).

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